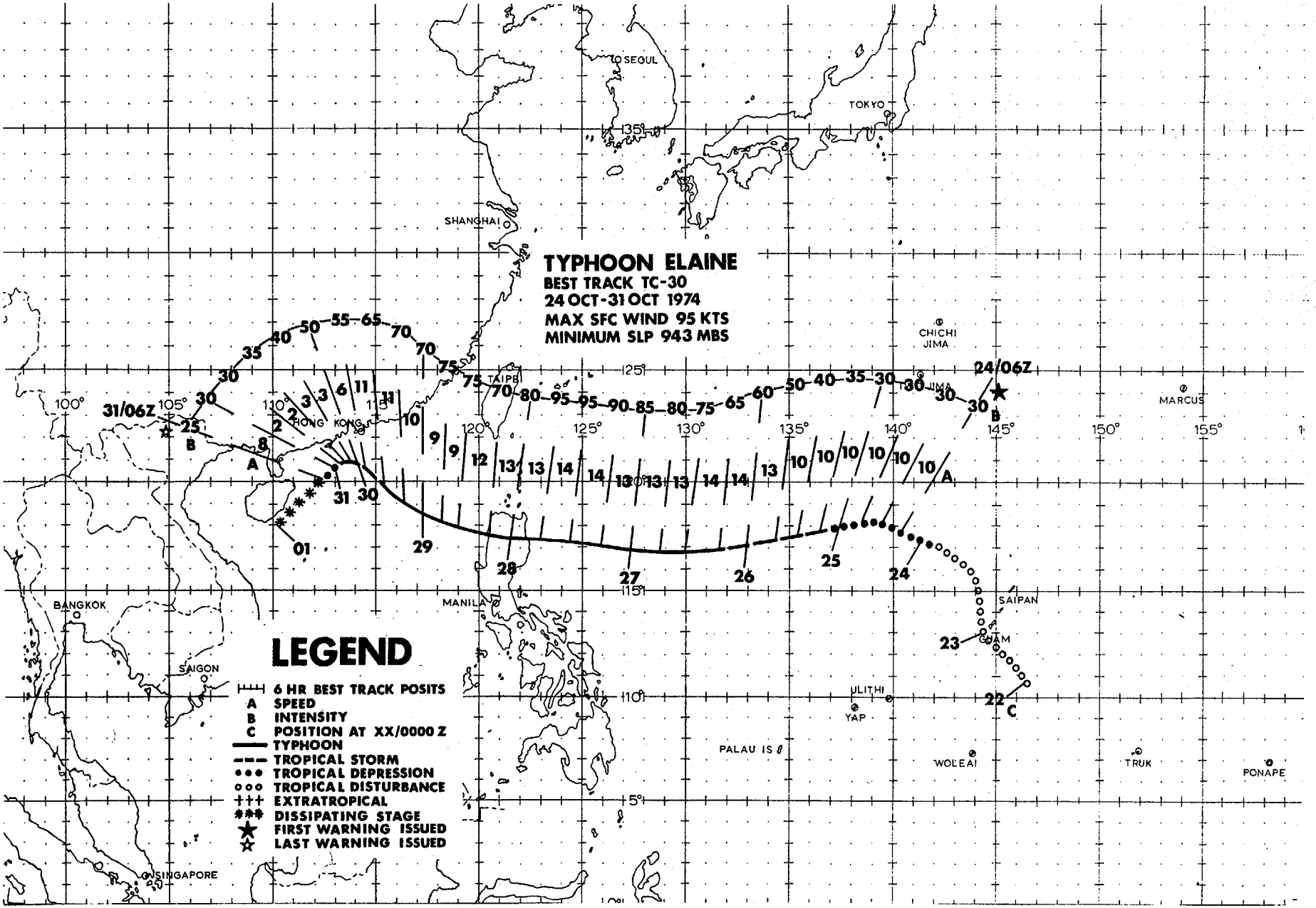
TYPHOON ELAINE
BEST TRACK TC-30
24 OCT-31 OCT 1974
MAX SFC WIND 95 KTS
MINIMUM SLP 943 MBS
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000 Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
SEOUL
TOKYO
SHANGHAI
TAIPEI
HONG KONG
CHICHI JIMA
JIMA
MARCUS
BANGKOK
SAIGON
MANILA
SAIPAN
GUAM
ULITHI
YAP
PALAU IS
WOLEAI
TRUK
PONAPE
SINGAPORE
31/06Z
24/06Z
100°
105°
110°
115°
120°
125°
130°
135°
140°
145°
150°
155°
160°
25°
20°
15°
10°
5°

Elaine, the largest of the typhoons to traverse the Philippine Sea during October, was upgraded from tropical depression status early on 25 October about 550 nm northwest of Guam. Developing from a circulation in the monsoon trough near Guam (the fourth to form in the trough during October), the envelope of Elaine's 1000 mb isobar eventually grew to 500 nm in diameter prior to striking Luzon a week after initial detection (Figure 4-26). During this period, Elaine intensified markedly as aircraft reconnaissance of the typhoon, 12 hours prior to striking Luzon, observed a central pressure of 943 mb and 700 mb flight level winds of 110 knots.

The same high pressure regime that forced Della on a westerly track through the Luzon straits on the 23rd extended eastward, and, late on the 24th, blocked Elaine (as a depression) from any further poleward movement. For a period of three days, Elaine was influenced by this ridge of high pressure to the north, forcing the typhoon on an atypical westerly heading across the Philippine Sea - an anamolous track for October tropical cyclones developing near the Marianas which normally follow a northward recurving course.

Elaine, the most severe typhoon to strike Luzon in the month, brought strong winds over a large expanse of the northern Philippines. Inland, Tuguegarao City observed a minimum pressure of 958.7 mb (27/2300Z) and peak gusts to 96 knots as the center passed south of the station. The west coast station of Vigan recorded a minimum pressure of 972.0 mb with an extreme gust of 100 knots (28/1100Z) as the center emerged into the South China Sea. Newspaper reports indicated the winds were strong enough to lift a new galvanized iron roof off a centuries old cathedral in Vigan. Manila (180 nm to the south) received gusts to 43 knots. Baguio (elevation 4860 feet) experienced extreme winds of 76 knots when the center passed 70 nm to the north.

Elaine brought 24-hour rainfall totals of 3 to 4 inches to northern Luzon while Manila reported 10.5 inches. An extreme 24-hour amount of 32.2 inches was reported at Baguio. The heavy rains combined with those brought by Della several days earlier left most farmlands under water.

Damage was extensive in Luzon with estimates of losses to crops, private and public properties amounting to $21 million. Thousands of homes were destroyed or damaged with some 300,000 persons left homeless. A total of 23 persons were listed as killed, 14 of whom were lost when swept off a ferryboat in the Sibuyan Sea.

Maritime casualties were high as 20 Philippine fishermen were counted missing in coastal waters. At sea, the 39-ton Japanese vessel KOSHU MARU sank east of Luzon with its crew of 11 presumed lost. The 3800 ton Korean ship MOKPO reported flooding and serious damage near the Luzon straits.

Elaine turned westward then west-northwestward while moving across the South China Sea as the region of high pressure dominating China weakened. During the 28th and 29th, the typhoon's circulation brought strong winds to several merchant vessels. The highest values reported were from the Japanese vessel OYLMPUS MARU experiencing 50 knots west of the center on 28/1200Z as Elaine was emerging from the Luzon coast, and later from the Russian ship ALEXANDER IVANOV on the 29th (1200Z) 120 nm north of the center who reported winds of 50 knots. Pratas Island observed sustained (10-minute) winds of 45 knots as Elaine's center passed 120 nm to the south on the 29th.

As the typhoon advanced northwestward, pressure over South China continued to fall causing Elaine to slow to almost a stall 90 nm south of Hong Kong late on the 29th. At this time, an onset of northeast monsoon flow influenced Elaine's circulation with subsequent filling and rapid weakening of winds about the center to storm strength. By the 31st, Elaine was reduced to a tropical depression and forced southwestward by an advancing high pressure ridge over South China. One day later the circulation dissipated southeast of Hainan Island.

During the cyclone's close proximity to Hong Kong, Elaine brought gale force winds to the Colony. The Royal Observatory registered a gust of 52 knots, while winds peaked to 55 knots on Wagalan Island. A two-day (30th & 31st) rainfall amount of 8.6 inches was measured at the Royal Observatory while Elaine stalled offshore.

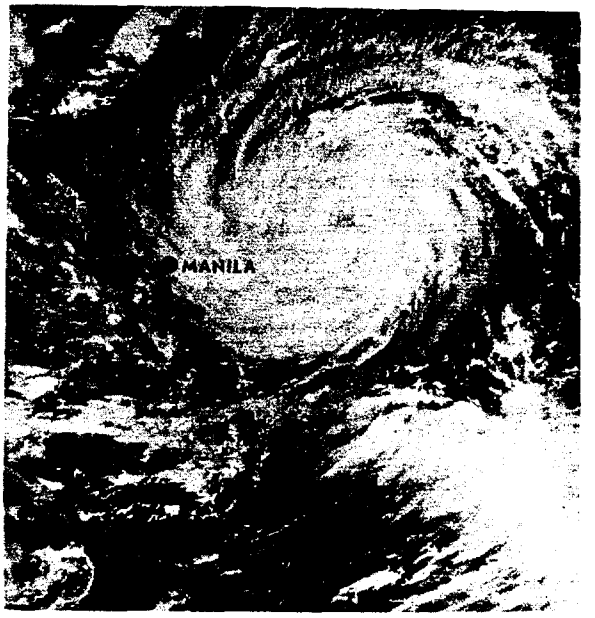

FIGURE 4-26. *Massive Typhoon Elaine 300 nm east of Luzon, one day prior to the center striking the island, 27 October 1974, 0015Z. (DMSP imagery)*